Nutrition & Menu Planning

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Nutrition Basics

- Nutrition:
  - The scientific study of food and nourishment, including food composition, dietary guidelines, and the roles that various nutrients have in maintaining health
- Food provides your body with:
  - Nutrients
  - Fuel
  - Water

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Nutrition Standards and Education

- Purpose:
  - Establishes nutritional standards (MDRIs) for military feeding
  - Establishes nutritional standards for operational rations
  - Outlines nutrition education policy
  - Applies to the services' hospital food service programs, the services' food service programs, and the DOD Combat Feeding Program

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- Commanders' Responsibility:
  - Ensure menus meet nutritional standards
  - Ensure incorporation of healthy foods in food programs
  - Ensure that healthy foods are convenient and appealing
  - Facilitate access to healthy foods at reasonable prices
  - Provide knowledgeable and skilled foodservice personnel

Macronutrient Needs

- AR 40-25:
  - Carbohydrate: 50-55% total daily calories
  - Protein: 0.8-1.5 g/Kg body weight
    - Easily met with 10-15% total daily calories
  - Fat: ≤30% total daily calories
    - <10% total daily calories from saturated fat
    - <300 mg cholesterol daily

Macronutrient Needs

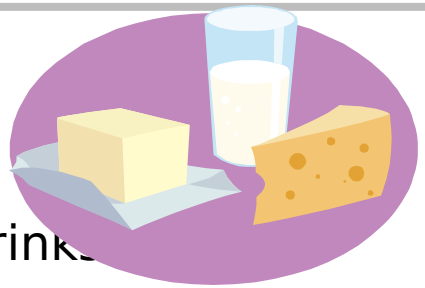
- *The Dietary Guidelines for Americans*
  - Carbohydrate: 45-65% total daily calories
  - Protein: 10-35% total daily
  - Fat: 20-35% total daily calories
    - <10% total daily calories from saturated fat
    - <300 mg cholesterol daily

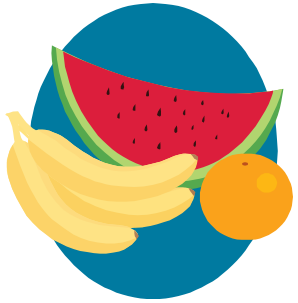
Carbohydrate

- Function:
  - Body's most efficient energy source (4 cal/gm)
  - Brain's preferred source of fuel
  - Only nutrient that can be stored as glycogen
- Types:
  - Simple
    - Broken down quickly
    - Affect blood sugars quickly
    - More likely to cause weight gain
  - Complex
    - Broken down more slowly, Long-term energy provider
    - Help with weight control
    - Good source of fiber

Carbohydrate

- Simple:
  - Fruit
  - Milk
  - Sodas, lemonade, sweet tea, energy drink
  - Sweets, candy
  - Sugar, honey, molasses
- Complex:
  - Whole grains
  - Brown rice
  - Whole Wheat pasta & bread
  - Vegetables





Protein

- Function:
  - Build and repair body tissue
  - Maintain healthy immune system
  - Provide energy (4 cal/gm)
- Classification
  - Complete (animal)
  - Incomplete (plant)

Protein

- High Fat Meats
  - Spareribs, sausage, cheese, bacon, hot dogs, cheese
- Medium fat meats
  - Poultry with skin, eggs, fried fish, most beef products, reduced fat cheese
- Lean meats
  - Round cuts, loin cuts, dark meat poultry w/o skin, salmon, low-fat cheese, tofu
- Very lean meats
  - White meat poultry w/o skin, egg whites, most fish, shellfish, fat-free cheese, beans, legumes

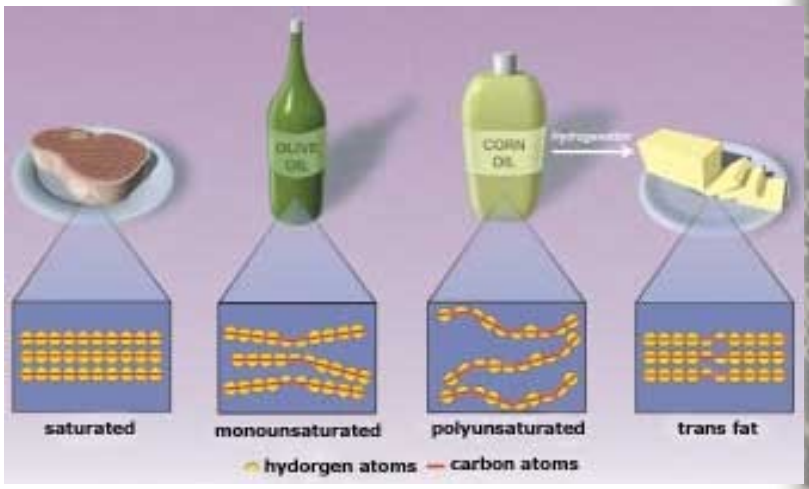
Protein

- Healthy cooking methods:
  - Baking
  - Broiling
  - Grilling
  - Steaming
  - Roasting
  - Poaching
  - Stir-frying in small amount of oil
  - Pressure Cooker
- Not-so-healthy cooking methods:
  - Frying
  - Sautéing in butter or large amounts of oil

Watch portion sizes

Dietary Fat

- Function
  - Provide concentrated energy (9 cal/gm)
  - Carries fat soluble vitamins
  - Satiety
  - Flavor and mouth feel
- Types:
  - Unsaturated
  - Saturated
  - Trans

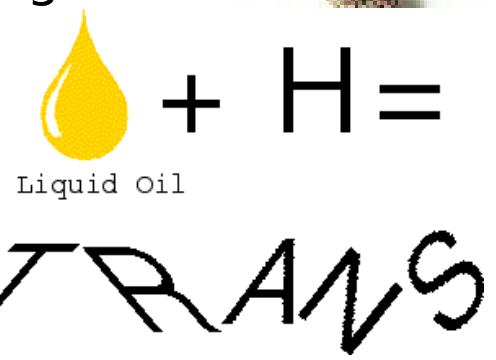


Saturated Fat

- Mostly animal in origin
- Solid at room temperature
- Cause increases in LDL cholesterol levels
- Foods high in saturated fat:
  - High fat meats and drippings
  - Whole fat dairy products
  - Egg yolks

Trans Fats

- Man-made fat
- Made by hydrogenating unsaturated fats
- Raises LDL cholesterol
- Lowers HDL cholesterol
- <1% of daily calories from trans fats
- Foods high in trans fats:
  - Margarine and hydrogenated shortening
  - Baked goods and snack foods
  - French fries, donuts and muffins

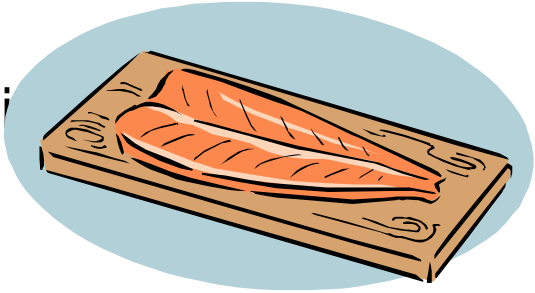


Monounsaturated Fat

- Monounsaturated Fats:
  - Liquid at room temperature
  - Come from plants
  - May lower LDL cholesterol
  - Does not affect HDL cholesterol
- Good sources of MUFAs:
  - Olive oil, canola oil, peanut oil
  - Nuts, seeds
  - Avocado

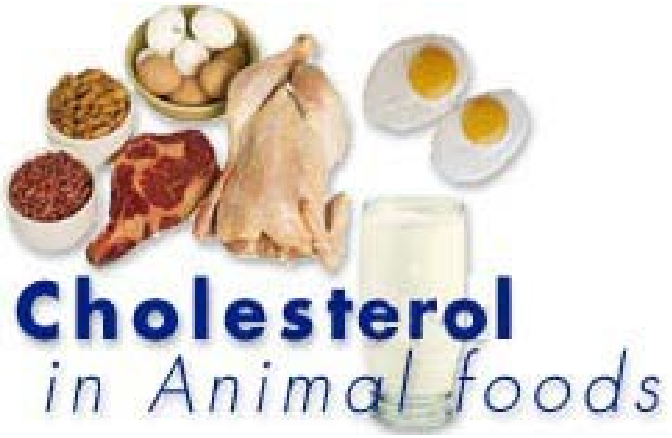
Polyunsaturated Fat

- Polyunsaturated Fats:
  - Liquid at room temperature
  - Good source of essential fatty acids (omega-3s and omega-6s)
  - May reduce LDL cholesterol
  - May reduce HDL cholesterol
- Sources of PUFAs:
  - Safflower, sunflower and corn oi
  - Fish
  - Flaxseed



Cholesterol

- What is it?
  - Fat-like waxy substance
  - Essential for body functionin
- Dietary cholesterol
  - Found ONLY in foods of animal origin
- Cholesterol in the blood
  - Produced in the liver
  - May contribute to atherosclerosis



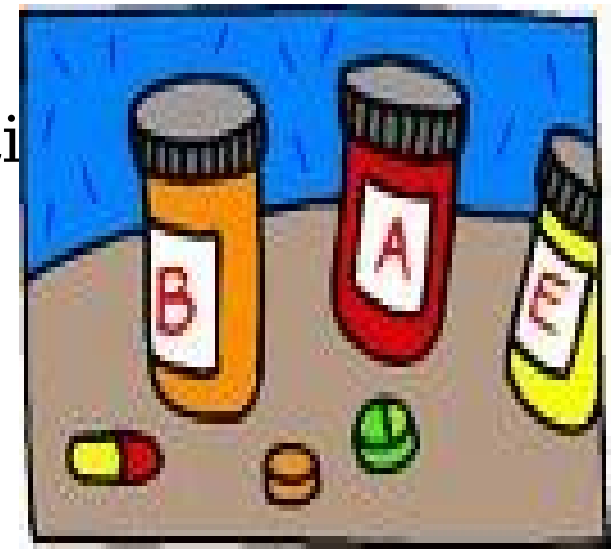
AHA recommendation: < 300 mg per day

Blood Lipids

- Total cholesterol: <200 mg/dL
- LDL cholesterol: <100 mg/dL
- HDL cholesterol:
  - >45 mg/dL for men
  - >55 mg/dL for women
- Triglycerides: <150 mg/dL

Vitamins

- Required in small quantities
- Regulators of metabolic functi
- Do NOT provide energy
- Best source: whole foods



- Types:
  - Fat soluble: (Vitamin A, D, E, K)
  - Water soluble: (Vitamin C & B complex)

Minerals

- Functions:
  - Building hard and soft tissue
  - Muscle contraction
  - Water, Acid-base and electrolyte balance
- Do NOT provide energy
- Types
  - Major:
    - **Calcium, Phosphorous, Magnesium, Potassium, Sodium, Chloride**
  - Minor:
    - **Iron, Zinc, Fluoride, Copper, Selenium, Iodine, Chromium**

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- Water
  - Avoid dehydration to maintain optimum performance
  - Cool water is beverage of choice for hydration
  - Flavored (not sweetened) waters may increase voluntary fluid intake
  - Requirements increase with wor
    intensity and sweat production

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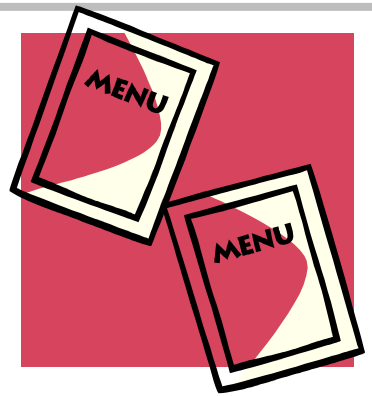
- MDRIs
  - Adapted from the Food and Nutrition Board's Recommended Daily Allowances and Dietary Reference Intakes
  - Intended for use by personnel involved with:
    - Menu development
    - Menu evaluation
    - Nutrition education

Menu Planning



- The menu should include:
  - Whole grains
  - Lean protein
    - Prepared in a healthy, low-fat manner
  - Fruits
    - Fresh, frozen or canned in light syrup or own juice
  - Vegetables
    - Fresh or frozen prepared without added fat
  - Low-fat dairy
    - 1% or fat-free

Meal Options

- Food Service Specialists
  - AR 30-22, 40-25
  - MyPyramid (mypyramid.gov)
  - Dietary Guidelines for Americans
  - Use healthy cooking techniques with minimum added fat and salt
  - Market healthy foods to customers
    - Table tents, posters, healthy plate displays
    - Free materials: http://chppm-www.apgea.army.mil/ (e-Catalog: search by categories/topics)

Meal Options

- Sack Lunches
  - Have input as to what goes in them
  - Sandwiches, baked chips, fresh fruit
- Boxed Lunches
  - Often high in calories and sodium
  - More appropriate in a field environment or during intense physical activity
- Operational rations
  - For peak performance in a field environment
  - Request enhancements (FFV, fresh bread etc.) to improve intake

- **QUESTIONS ?**